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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,203	02/05/2001	Timothy M. Schmidl	TI-31284	3036
23494	7590	01/18/2011		
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265				
EXAMINER				
GHULAMALI, QUTBUDDIN				
ART UNIT		PAPER NUMBER		
2611				
NOTIFICATION DATE		DELIVERY MODE		
01/18/2011		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

[uspto@ti.com](mailto:uspto@ti.com)

### Office Action Summary

**Application No.**

09/777,203

**Applicant(s)**

SCHMIDL ET AL.

**Examiner**

Qutbuddin Ghulamali

**Art Unit**

2611

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 October 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 10-22 and 33-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-22, 33-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-85/06)
- Paper No(s) Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s) Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This action is responsive to amendment filed 10/26/2010.

***Response to Remarks/Amendment***

2. Applicant's remarks with respect to the amended claims 10-22, 33-51, have been fully considered. The applicant remarks page 10, Mantha fails to disclose, with reference to presently amended claims 10, 16, 33 and 40, "establishing communication in a first mode and switching to a second mode after communication is established." Applicant further remarks, page 10, that the newly added limitation to claims 42 and 46, encoding data in a first mode to establish communication and encoding data in a second mode, is not patentable over Mantha et al. The newly introduced limitation however, is considered moot in view of the new ground(s) of rejection. The rejection follows.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 40-41, 10-22, 33-39 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Mantha et al (USP 7,000,174) in view of Hawkins et al (US Pub. 2006/0205432).

Regarding claim 40, Mantha discloses a method and system of communicating data from a transmitter to a receiver (col. 4, lines 15-19) comprising:

the receiving end receiving from the transmitter a first transmission including original data bits and CRC bits (col. 2, lines 45-46) without the parity bits, produced at the transmitting end by operation of an encoding algorithm applied to the original data bits (col. 16, lines 17-49);

receiving end determining whether the original data bits have been correctly received and responsive to a determination that the original data bits have not been received correctly, the receiving end transmitting to the transmitting end a request for transmission of the parity bits (col. 6, lines 59-67; col. 17, lines 1-3). Mantha does not explicitly disclose establishing communication in a first mode with the transmitting end; switching to a second mode of communication with the transmitter end after communication is established. Hawkins, however, discloses establishing communication in a first mode with another data communication apparatus (transmitting end) and switching to a second mode with the other end after communication is established (with another data communication apparatus) (page 6, section 0072, lines 3-12; section 0083, lines 3-11; section 0084, lines 1-3). It would have been obvious to one of ordinary skill in the art at the time of invention was made to use the communication controller as taught by Hawkins with the data communication apparatus of Mantha, because it allow, for example, the controller configured to communicatively couple the appropriate communication elements of the device, which would correspond to a particular mode (a first mode, second mode and so on) of communication selected. One of ordinary skill in the art would be motivated to do so to provide configurations that are particularly useful in managing personal area networks such as Bluetooth.

Regarding claim 41, Mantha discloses a convolutional encoder (see figs. 2, 4). (Note, use and practice of convolutional encoding algorithm are commonly well known in the art).

Regarding claim 10, Mantha discloses a data communication apparatus (col. 4, lines 15-19), comprising:

an input for receiving original data bits that are to be transmitted via a communication channel (communication medium; col. 4, lines 49-56) to another data communication apparatus (remote device) (col. 4, lines 15-30, 38-56);

an encoder coupled to said input for applying to the original data bits an encoding algorithm (encoding technique) that produces parity bits (col. 3, lines 56-67; col. 4, lines 1-30);

an output for providing bits that are to be transmitted across the communication channel (col. 4, lines 26-30); and

a data path coupled between said encoder and said output, said data path receiving information from said another data communication apparatus (receiver), said data path selecting one of the original data bits with CRC bits and parity bits in response to a first information (initial information) (col. 16, lines 61-65), data path selecting the other of the original data bits with CRC bits and parity bits in response to a second information to be provided to out for transmission across communication channel (communication medium) to another data communication apparatus (remote device or receiver) (col. 16, lines 61-65; col. 17, lines 11-55; col. 18, lines 25-53). Mantha does not explicitly disclose a controller arranged to establish communication in a first mode with another

data communication apparatus, the controller arranged to switch in a second mode with another data communication apparatus after communication is established. Hawkins, however, discloses establishing communication in a first mode with another data communication apparatus and switching to a second mode after communication is established (with another data communication apparatus with another data communication apparatus with another data communication apparatus with another data communication apparatus (page 6, section 0072, lines 3-12; section 0083, lines 3-11; section 0084, lines 1-3). It would have been obvious to one of ordinary skill in the art at the time of invention was made to use the communication controller as taught by Hawkins with the data communication apparatus of Mantha, because it allow, for example, the controller configured to communicatively couple the appropriate communication elements of the device, which would correspond to a particular mode (a first mode, second mode and so on) of communication selected. One of ordinary skill in the art would be motivated to do so to provide configurations that are particularly useful in managing personal area networks such as Bluetooth.

Regarding claim 11, Mantha discloses data path includes a buffer coupled to said encoder for storing the original data bits and the parity bits (col. 4, lines 7-14).

Regarding claim 12, Mantha discloses data path includes a selector (controller) coupled between said buffer and said output, said selector responsive to said information for obtaining one of the original data bits with CRC bits and the parity bits from said buffer to be provided to said output for transmission to said another data communication apparatus (col. 4, lines 7-14).

Regarding claim 13, Mantha discloses a first information includes an acknowledgement (ACK) that the information received correctly a second information includes negative acknowledgement indicating that an earlier transmission has not been received correctly at said another communication apparatus, said data path responsive to the negative acknowledgement for changing its selection from one of the original data bits and the overhead bits to the other of the original data bits and the overhead bits (col. 15, lines 29-61)

Regarding claims 14 and 22, Mantha discloses a wireless communication apparatus (col. 29, lines 15-20).

Regarding claims 15, Mantha discloses a convolutional encoder (see figs. 2, 4). (Note, use and practice of using convolutional encoding algorithm are commonly well known in the art).

Regarding claim 16, Mantha discloses a data communication apparatus comprising:  
an input for receiving a received version of original bits with Cyclical Redundancy Check (CRC) bits (col. 4, lines 49-56) in response to a first information without parity bits produced at another data communication apparatus by operation of an encoding algorithm applied to the original bits, said input receiving said parity bits in response to a second information, said original bits with CRC bits and parity bits transmitted over a communication channel by said another data communication apparatus (col. 3, lines 56-67; col. 4, lines 1-30, 38-56);

an error detector coupled to said input for determining whether the received version of the original data bits is correct (fig. 6; col. 10, lines 17-65); and

a controller coupled to said error detector, responsive to a determination that the received version of the original data bits is correct for providing said first information to said another data communication apparatus, and responsive to a determination that the received version of the original data bits is incorrect for providing said second information to said another data communication apparatus (a receiver or remote unit, col. 5, lines 1-29) (col. 17, lines 35-53, 56-67; col. 18, lines 1-11). Mantha does not explicitly disclose a controller arranged to establish communication in a first mode with another data communication apparatus, the controller arranged to switch in a second mode with another data communication apparatus after communication is established. Hawkins, however, discloses establishing communication in a first mode with another data communication apparatus and switching to a second mode after communication is established (with another data communication apparatus with another data communication apparatus with another data communication apparatus with another data communication apparatus (page 6, section 0072, lines 3-12; section 0083, lines 3-11; section 0084, lines 1-3). It would have been obvious to one of ordinary skill in the art at the time of invention was made to use the communication controller as taught by Hawkins with the data communication apparatus of Mantha, because it allow, for example, the controller configured to communicatively couple the appropriate communication elements of the device, which would correspond to a particular mode (a first mode, second mode and so on) of communication selected. One of ordinary skill in



the art would be motivated to do so to provide configurations that are particularly useful in managing personal area networks such as Bluetooth.

Regarding claim 17, Mantha discloses input for receiving a received version of the overhead bits as transmitted from said another data communication apparatus, said controller coupled to said input for applying to the received version of the overhead bits a mapping (selected reordering) operation which, if the overhead bits have been received correctly at the receiving end, will result in the original data bits, said error detector coupled to said controller for applying an error detection procedure to the result of the mapping (selected reordering, arranged in a specific order or scheme) operation to determine whether the mapping operation has resulted in the original data bits (col. 10, lines 3-38).

Regarding claims 18, 36, 38, Mantha discloses a decoder (fig. 6, element 64a, 64b) coupled to input and controller, the controller responsive to a determination by said error detector that the mapping operation has not resulted in the original data bits for signaling said decoder to apply to the received version, of the original data bits and the received version of the overhead bits a decoding algorithm that corresponds to said encoding algorithm (col. 10, lines 3-64).

Regarding claim 19, Mantha discloses a buffer coupled between said input and said decoder for storing the received version of the original bits and the received version of the overhead bits for use by said decoder (col. 4, lines 7-14).

Regarding claim 20, Mantha discloses error detector is coupled to said decoder for determining whether said decoding algorithm has resulted in the original data bits,

controller operable in response to a determination that said decoding algorithm has not resulted in the original data bits for providing for transmission to other data communication apparatus a request for retransmission of the original data bits (col. 6, lines 45-67; col. 7, lines 1-5).

Regarding claims 21, 37, Mantha discloses decoder is a Viterbi decoder (col. 10, lines 3-64) (Note, as best understood by the examiner, Viterbi decoder for decoding is conventionally well known in the art).

Regarding claim 33, Mantha discloses a data communications system and a method for transmission of signals from a transmitter to a receiver, the transmitter comprising:

the transmitter end applying to a plurality of original data bits that are to be transmitted to the receiving end an encoding algorithm that produces CRC bits and parity bits (col. 4, lines 15-30);

the transmitting end transmitting the original data bits and CRC bits without the parity bits in a first transmission to the receiving end (col. 2, lines 45-46; col. 16, lines 17-49); and

transmitting end refraining from transmitting the parity bits until the transmitting end receives an indication of error in reception from the receiving end (col. 15, lines 29-39). Mantha does not explicitly disclose establishing communication in a first mode with the receiving end; switching to a second mode of communication with the receiving end after communication is established. Hawkins, however, discloses establishing communication in a first mode with the receiving end; switching to a second mode of

communication with the receiving end after communication is established (with another data communication device or apparatus) (page 6, section 0072, lines 3-12; section 0083, lines 3-11; section 0084, lines 1-3). It would have been obvious to one of ordinary skill in the art at the time of invention was made to use the communication controller as taught by Hawkins with the data communication apparatus of Mantha, because it allow, for example, the controller configured to communicatively couple the appropriate communication elements of the device, which would correspond to a particular mode (a first mode, second mode and so on) of communication selected. One of ordinary skill in the art would be motivated to do so to provide configurations that are particularly useful in managing personal area networks such as Bluetooth.

Regarding claim 34, the claim is not further limiting claim 33, and having same or similar limitations as recited in claim 33, is likewise rejected.

Regarding claim 35, Mantha discloses all limitations of the claim above. Mantha further discloses, receiving end combining a received version of the original data bits and a received version of the parity bits to produce a combined set of received bits and the receiving end applying to the combined set of received bits a decoding algorithm that corresponds to said encoding (col. 17, lines 56-67; col. 18, lines 1-11).

As per claim 39, Mantha discloses transmitter end retransmitting the original data bits to the receiving end and, in response to a determination by the receiving end that said retransmission of the original data bits has not been received correctly, the receiving end combining a received version of the retransmitted original data bits with said received version of the overhead bits to produce another combined set of received

bits, and the receiving end applying said decoding algorithm to said another combined set of received bits col. 10, lines 3-64).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 42-51 are rejected under 35 U.S.C. 102 (e) as being anticipated by Mantha et al (USP 7,000,174).

Regarding claims 42 and 46, Mantha discloses a method of transmitting and receiving data comprising:  
encoding data by a first method (Type-I) to establish communication with a remote receiver (col. 2, lines 29-40);  
encoding data by a second method (type-II) to communicate with the remote receiver after communication is established (col. 2, lines 42-57);  
the transmitter end applying to a plurality of original data bits that are to be transmitted to the receiving end an encoding algorithm that produces CRC bits and parity bits (col. 4, lines 15-30);

the transmitting end transmitting the original data bits and CRC bits without the parity bits in a first transmission to the receiving end (col. 2, lines 45-46; col. 16, lines 17-49); and

transmitting end refraining from transmitting the parity bits until the transmitting end receives an indication of error in reception from the receiving end (col. 15, lines 29-39).

Regarding claim 43, the claim is not further limiting claim 42, and having same or similar limitations as recited in claim 42, is likewise rejected.

Regarding claim 44 Mantha discloses decoder is a Viterbi decoder (col. 10, lines 3-64) (Note, as best understood by the examiner, Viterbi decoder for decoding is conventionally well known in the art).

Regarding claims 45, 49, Mantha discloses a decoder (fig. 6, element 64a, 64b) coupled to input and controller, the controller responsive to a determination by said error detector that the mapping operation has not resulted in the original data bits for signaling said decoder to apply to the received version, of the original data bits and the received version of the overhead bits a decoding algorithm that corresponds to said encoding algorithm (col. 10, lines 3-64).

Regarding claim 47, Mantha discloses a convolutional encoder (see figs. 2, 4). (Note, use and practice of using convolutional encoding algorithm are commonly well known in the art).

Regarding claims 48, 50 and 51, Mantha discloses all limitations of the claim above. Mantha further discloses, receiving end combining a received version of the original data bits and a received version of the parity bits to produce a combined set of

received bits and the receiving end applying to the combined set of received bits a decoding algorithm that corresponds to said encoding (col. 17, lines 56-67; col. 18, lines 1-11).

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutbuddin Ghulamali whose telephone number is (571)-272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QG.  
January 11, 2011.

/CHIEH M FAN/  
Supervisory Patent Examiner, Art Unit 2611